

REMARKS

The applicants originally submitted claims 1-19 in this application. The applicants have amended independent claims 1 and 10. The applicants have cancelled claims 14-19 in response to a restriction requirement, thus affirming a provisional election made on March 28, 2003. Accordingly, claims 1-13 currently are pending in this application.

Claim Rejections – 35 U.S.C. § 112

The Examiner rejected claims 1-13 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicants regard as the invention. Specifically, the term “the matching” lacks antecedent basis. In response to the rejection, the applicants have amended independent claims 1 and 10 to remove the basis for the rejection.

Claims 1 and 10 now recite that the adjusting step adjusts the size of a heated portion of at least one of the preform core rod and the overclad tube “to improve matching of the radial size of the preform core rod and the overclad tube” prior to the collapse of the overclad tube onto the preform core rod. Claims 2-9 depend from independent claim 1 and claims 11-13 depend from independent claim 10. The applicants respectfully submit that the amendments to independent claims 1 and 10 have removed the basis for the rejection. Accordingly, the applicants respectfully request that the Examiner withdraw the rejection.

Claim Rejections – 35 U.S.C. § 102

The Examiner rejected claims 1, 6-9, 10 and 13 under 35 U.S.C. §102(b) as being anticipated by Baumgart et al. (US 4,820,322). The applicants respectfully traverse the rejection.

Baumgart et al. only disclose “advancing” the overclad tube and preform rod into the furnace for purposes of facilitating the drawing of the optical fiber therefrom. See, e.g., col. 9, lines 48-51. Nothing in Baumgart et al. teaches or

suggests actively adjusting the radial size of the overclad tube and/or the preform rod, by controlling the applied compressive and/or expansive axial force, to match the respective axial dimensions of the overclad tube and the preform rod. The applicants have amended independent claims 1 and 10 to reflect this existing distinction between the applicants' invention and Baumgart et al. More specifically, the applicants have amended claim 1 to clarify that the adjusting step actively adjusts the radial size of the heated portion of the preform core rod and/or the overclad tube to improve matching of the radial size of the preform core rod and the overclad tube. Support for the amendments is found, e.g., in Figures 1 and 4, and at page 3, lines 9-22 of the specification. The applicants actively adjust the radial size of the overclad tube and/or the preform rod, e.g., using a controller that coordinates the compressive and/or expansive axial force applied to the overclad tube and/or the preform rod.

Baumgart et al., by simply "advancing" the overclad tube and preform rod into the furnace, neither teaches nor suggests actively adjusting various heated portions of the overclad tube and/or the preform rod to match their respective radial dimensions. Advancing the ends of the overclad tube and the preform rod would apply only equal pressure to both the overclad tube and the preform rod. Nothing in Baumgart et al. suggests varying (e.g., increasing and decreasing) the axial pressure applied to the overclad tube and/or the preform rod to increase and/or decrease the radial size of the overclad tube and/or the preform rod.

Claims 6-9 depend from claim 1 and incorporate all of the features of claim 1. Thus, claims 6-9 are allowable for all of the reasons discussed above in connection with claim 1. Furthermore, claims 6-9 include other features not shown in or suggested by the art of record. Likewise, claim 13 depends from claim 10 and incorporates all of the features of claim 10. Thus, claim 13 is allowable at least for all of the reasons that claim 10 is allowable. Furthermore, claim 13 includes other features not shown or suggested by the art of record.

In view of these claim amendments, the applicants respectfully request that the Examiner withdraw the rejection under 35 U.S.C. §102(b) as being anticipated by Baumgart et al.

The Examiner rejected claims 1-5 and 7-9 under 35 U.S.C. §102(b) as being anticipated by Dobbins (WO 97/30944). The applicants respectfully traverse the rejection.

Dobbins controls the velocity of the downfeeds of the core glass rod and the overclad tube so that the diameter of the core of the fiber varies along the length of the fiber but the mass per unit time of glass passing through the furnace remains constant. The applicants apply compressive and/or expansive force at various times to the overclad tube and/or the preform core rod to improve matching of the radial dimension of the preform core rod along its length with that of the overclad tube. The applicants' method is fundamentally different from the method in Dobbins.

Dobbins desires to make dispersion decreasing fiber and dispersion managed fiber having a core that varies along the length of the fiber but with a constant fiber outer diameter. In this manner, Dobbins hopes to overcome problems associated with prior art fiber that has changing optical properties over the length of the fiber. Nothing in Dobbins teaches or suggests the applicants' invention, which actively matches the radial dimensions of the preform core rod and the overclad tube, i.e., the outer diameter of the preform core rod and the inner diameter of the overclad tube. Dobbins only teaches purposely varying the outer diameter of the preform rod along its length and keeping constant the outer diameter of the overclad tube so that optical fiber drawn from the preform has a constant outer diameter. Again, the applicants desire to affect the outer diameter of the preform core rod and the inner diameter of the overclad tube so that the two diameters match. The applicants' claims as currently recited adequately reflect this distinction.

In view of these remarks, the applicants respectfully request that the Examiner withdraw the rejection under 35 U.S.C. §102(b) as being anticipated by Dobbins.

Claim Rejections – 35 U.S.C. § 103

The Examiner rejected claims 6 and 10-13 under 35 U.S.C. §103(a) as being unpatentable over Dobbins as applied to claims 1-5 and 7-9 above and in view of Fleming Jr. et al. (US 5,578,106). The applicants respectfully traverse the rejection based on the foregoing remarks and amendments to independent claims 1 and 10.


As discussed hereinabove, Dobbins neither teaches nor suggests actively matching the radial dimensions of the preform core rod and the overclad tube; Dobbins only varies the outer diameter of the preform rod along its length and keeps the outer diameter of the overclad tube constant so that optical fiber drawn from the preform has a constant outer diameter. Fleming Jr. et al., which is cited for its teaching of establishing a pressure gradient across the overclad tube wherein the pressure outside the overclad tube is greater than the pressure inside, do not cure the deficiency of Dobbins in rendering the applicants' invention obvious.

Accordingly, the applicants respectfully request that the Examiner withdraw the rejection under 35 U.S.C. §103(a) over Dobbins in view of Fleming Jr. et al.

The applicants submit that all claims now are in patentable form, and respectfully urge that all the claims be allowed and the application be passed to issue. If the Examiner disagrees, the Examiner is invited to call the attorney for the applicants at the telephone number provided below.

Respectfully submitted,

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